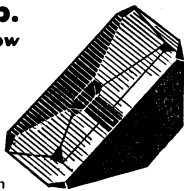


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INVENTION

Patents of the Week

The man-rocket, devised for flying through air or maneuvering in space, has been made lighter in weight and more economical with fuel by two improvements.

► **IMPROVEMENTS** in the rocket device by which a man can fly through the air earned two of the 1,039 patents granted by the U.S. Patent Office this week.

The man-rocket was on daily display at the New York World's Fair this summer and has been seen by hundreds of thousands at other public demonstrations around the world. The system was developed and tested for Bell Aerospace Corporation, Wheatfield, N.Y.

The portable rocket equipment has potential applications for tactical and rescue missions by U.S. Department of Defense personnel. The rocket belt could also be used by the spaceman of the future to move around on the moon or to maneuver in space where gravity is zero.

The device uses a gas propellant stored under high pressure in containers strapped to the user's body. Moving control mechanism in the desired direction causes thrust to be exerted in that direction.

One improvement, granted patent 3,149,798, is a glass fiber pouch in which the rocket fuel can be stored, thus reducing the weight of the apparatus. This improvement was devised by Wendell F. Moore, a rocket propulsion engineer of Youngstown, N.Y., who also invented the original rocket belt built by Bell Aerospace.

The second improvement, granted patent 3,149,799, provides for more efficient use of the fuel, thus lengthening possible flight times. It was developed by John K. Hulbert of Grand Island, N.Y.

light from a laser, which gives very intense coherent light, would have sufficient energy to knock a balloon off course. This deflection can be easily detected by noting the changes in frequency of the reflected light beam.

The "space vehicle decoy discrimination system" earned patent 3,150,363 for Mr. Finvold, who assigned rights to The Ryan Aeronautical Company, San Diego, Calif.

Other Patents of Interest

A system for modulating a light beam, for which Hans George Dehmelt of Seattle was awarded patent 3,150,313, rights being assigned to Varian Associates, Palo Alto, Calif.

Five devices for use in electron microscopes, all invented by Alvar P. Wilska of Tucson, Ariz., who assigned rights to patents 3,150,255 through 3,150,259 to Philips Electronics and Pharmaceutical Industries Corporation, New York.

A detector that could be used on an airplane in flight to locate the jet stream, then take advantage of this high-speed wind band to increase ground speed. Norman Sissenwine of Natick, Mass., Robert Leviton of Framingham, Mass., and Charles F. Campen Jr. of Pasadena, Calif., assigned rights to patent 3,149,491 to the Government through the Secretary of the Air Force.

A gauge for measuring stress by using the piezoresistive properties of a semiconductor. Dr. William G. Pfann of Far Hills, N.J. assigned rights to patent 3,150,341 to Bell Telephone Laboratories.

• Science News Letter, 86:238 October 10, 1964

BIOTECHNOLOGY

Ultrasound Technique Detects Brain Tumors

► **HIGH-FREQUENCY** sound waves can now be used to detect brain tumors, two Japanese medical investigators told the VII Symposium Neuroradiologicum, an international meeting of neuro-radiologists in New York City.

Drs. Kenji Tanaka and Kazufumi Ito, both of Tokyo's Juntendo University School of Medicine, said tumor echoes were found in 72% of a group of persons with verified brain tumors.

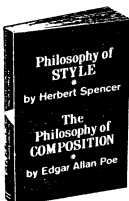
The two researchers believe ultrasound works in diagnosing brain tumors because of the difference between the ways normal tissue and tumor tissue transmit sound. Brain tumor tissue impedes sounds and complicates echo patterns more than normal tissue, they have found.

• Science News Letter, 86:238 October 10, 1964

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Electromagnetic Apparatus

An explosion in a liquid such as water can produce an effect on another object at some distance, as any submariner who has survived a depth charge barrage can testify.

Now Henry Joseph Stinger of Mendenhall, Pa., has been granted a patent for obtaining useful work from the explosive energy of a strong electrical discharge. He assigned rights to patent 2,149,372 to E. I. du Pont de Nemours and Company, Wilmington, Del.

Method for Spotting Decoys

A method for spotting the bomb-carrying missile from among the decoys surrounding it for confusion has been devised by Rodger C. Finvold of San Diego, Calif. The method can also be used to detect a real satellite among decoys.

The usual decoy, for reasons of compactness, weight and cost, is an inflatable balloon with a reflective coating. Its purpose is to confuse detection and tracking instruments.

Mr. Finvold has found that a beam of